



Supplement of

Drivers of flash flood frequency and intensity in the United States: a quantitative analysis of hydrometeorological interactions

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Supplementary Material

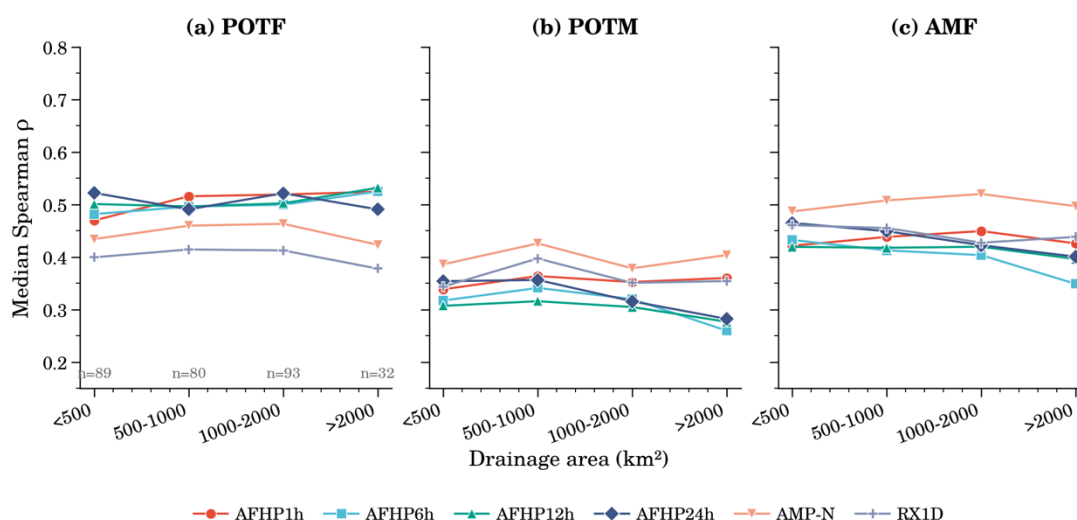


Figure S1. Median Spearman rank correlations between precipitation indices and flood metrics, stratified by catchment drainage area (<500 km², n = 89; 500-1000 km², n = 80; 1000-2000 km², n = 93; >2000 km², n = 32). Panels show correlations with (a) POTF, (b) POTM, and (c) AMF.

Table S1. Number and percentage of catchments classified by dominant driver of AMF trends.

Driver category	Count	%
P	188	63.9
T	15	5.1
Landcover	0	0
P & T	77	26.2
P & Land cover	4	1.4
Land cover & T	3	1.0
P & Landcover & T	2	0.7
N/A	5	1.7
Total	294	100

Table S2. Sensitivity of significant trend counts to the choice of p-value threshold.

Variable	N	p < 0.01		p < 0.05		p < 0.10	
		Increase	Decrease	Increase	Decrease	Increase	Decrease
POTF	294	27 (9.2%)	5 (1.7%)	51 (17.3%)	15 (5.1%)	67 (22.8%)	19 (6.5%)
AMF	294	8 (2.7%)	1 (0.3%)	21 (7.1%)	3 (1.0%)	32 (10.9%)	10 (3.4%)
AFHP6h	294	171 (58.2%)	22 (7.5%)	195 (66.3%)	25 (8.5%)	207 (70.4%)	27 (9.2%)
POTM	294	5 (1.7%)	0 (0.0%)	15 (5.1%)	6 (2.0%)	28 (9.5%)	9 (3.1%)
AFHP1h	294	192 (65.3%)	40 (13.6%)	198 (67.3%)	43 (14.6%)	205 (69.7%)	44 (15.0%)
AFHP12h	294	119 (40.5%)	20 (6.8%)	156 (53.1%)	27 (9.2%)	173 (58.8%)	31 (10.5%)
AFHP24h	294	54 (18.4%)	17 (5.8%)	88 (29.9%)	29 (9.9%)	111 (37.8%)	31 (10.5%)
MDF	294	3 (1.0%)	0 (0.0%)	12 (4.1%)	1 (0.3%)	23 (7.8%)	5 (1.7%)

Table S3. Results of Benjamini-Hochberg false discovery rate (FDR) correction applied to trend tests across 294 catchments.

Variable	N	Sig. increase (p<0.05)	Sig. decrease (p<0.05)	Sig. increase (FDR q<0.05)	Sig. decrease (FDR q<0.05)	Expected FP by chance	% increase (p<0.05)	% increase (FDR q<0.05)
AMF	294	21	3	1	0	14.7	7.1	0.3
AFHP1h	294	198	43	196	41	14.7	67.3	66.7
AFHP3h	294	208	31	205	29	14.7	70.7	69.7
AFHP6h	294	195	25	190	25	14.7	66.3	64.6
AFHP12h	294	156	27	141	25	14.7	53.1	48.0
AFHP24h	294	88	29	60	20	14.7	29.9	20.4
AP	294	26	16	3	6	14.7	8.8	1.0
AMoP	294	18	21	0	0	14.7	6.1	0.0
AMP-N	294	22	15	0	0	14.7	7.5	0.0
RX1D	294	37	5	1	0	14.7	12.6	0.3
APET	294	11	32	0	2	14.7	3.7	0.0
AT	294	81	0	0	0	14.7	27.6	0.0
POTM	294	15	6	0	0	14.7	5.1	0.0
POTF	294	51	15	22	3	14.7	17.3	7.5
MDF	294	12	1	1	0	14.7	4.1	0.3

Note: Sig = significant at the stated level.